

[0097] An inorganic EL element may be used as an EL element. The inorganic EL element has between a first electrode and a second electrode an inorganic EL layer which is sandwiched by insulated layers. The inorganic EL layer contains therein a heretofore known inorganic luminous material.

[0098] A lighting unit according to a second preferred embodiment of the present invention will now be described with reference to FIGS. 3 and 4. FIG. 3 is a schematic sectional view illustrating the lighting unit according to the second preferred embodiment of the present invention. FIG. 4 is a schematic plan view illustrating the lighting unit according to the second preferred embodiment of the present invention. It is noted that the same numeric designations are used for components in common with the lighting unit according to the first preferred embodiment, and the detailed explanation in common with the first preferred embodiment is omitted.

[0099] The lighting unit of the second preferred embodiment is different from that of the first preferred embodiment in that a light scattering member (a gelled member) 20, which is formed mainly by gel or only by gel is used, as a light scattering means.

[0100] The light scattering member 20 is interposed between the end faces of the transparent substrates 13 of the adjacent panels 11. The lighting unit 10 has a flat frame 21 so that each panel 11 is pushed in a direction in which the adjacent panels 11 approach each other, and the lighting unit 10 provides a basal plate 22 on one side of the frame 21. The panels 11 are laid in the frame 21 so that the protective film 18 contacts the basal plate 22.

[0101] The light scattering member 20 has transparent particles scattered therein whose refractive index is different from that of the light scattering member 20 so as to function as a light scattering means. For the light scattering member 20, for example, a silicone gel has transparent particles scattered therein whose refractive index is different from that of the silicone gel, and the particles scatter light. Therefore, a scattering means provided in the gelled member 20 is capable of being kept in a certain place.

[0102] The lighting unit of the second preferred embodiment has the same effects as that of the first preferred embodiment. In addition, the lighting unit of the second preferred embodiment has the following beneficial effects.

[0103] (7) The amount of light which enters from the end face of the transparent substrate 13 into the light scattering member 20 is increased in comparison with a case that a solid light scattering member is used.

[0104] Since the light scattering member 20 is mainly made of gel, the light scattering member 20 is capable of closely contacting the end face of the transparent substrate 13, thereby substantially eliminating an interface between the light scattering member 20 and the transparent substrate 13.

[0105] That is, since the gelled member 20 is formed between the end faces of the transparent substrates 13 of the adjacent panels 11, the gelled member 20 is capable of filling a space between the adjacent panels 11. In other words, the gelled member 20 and the end face of the transparent substrate 13 are capable of being closely contacted with each

other. Therefore, for the light which has entered from each organic EL element 14 to the transparent substrate 13, the light which travels to the light exit surface 13a at an angle equal to or more than the critical angle easily travels into the gelled member 20.

[0106] It is noted that the same effect as the effect (7) of the second preferred embodiment is obtained even if a gap exists in a space between the gelled member 20 and the transparent substrate 13.

[0107] (8) The lighting unit 10 is capable of being formed flexibly to some extent.

[0108] That is, the lighting unit 10 is capable of having an elasticity to some extent. Since the panels 11 are joined together through gel, even if a certain degree of power is applied to the lighting unit 10, a possibility of breaking the connection of the adjacent panels 11 is reduced.

[0109] (9) The panels 11 are individually exchanged.

[0110] A defective portion of the lighting unit 10 is eliminated by individually exchanging defective panels 11 for new panels 11, thereby being capable of extending a lifetime of the lighting unit 10 in comparison with a case where the lighting unit 10 of the same size is formed by one EL element, and a case where the panels 11 are not individually exchanged. Especially, in comparison with the aforementioned first to third prior art solutions, the panels of the same structure are adopted. In addition, it rarely occurs that a special operation upon exchange is required.

[0111] It is noted that the lighting unit of the second preferred embodiment is similar to that of the first preferred embodiment and the main object is not changed. In addition, the lighting unit of the second preferred embodiment may be modified as follows. It is also naturally possible to appropriately combine these modified examples.

[0112] The space between the end faces of the transparent substrate 13 may be constructed so that a gel, a light scattering member and a gel are arranged in this order.

[0113] Thus, a closely contacting performance and an elastic performance is caused by the gel to have the aforementioned effects. In addition, for a light scattering member, the light scattering member similar to that of the lighting unit according to the first preferred embodiment may be adopted.

[0114] The light scattering member 20 may be made of a slurry-material or a liquid in place of gel. In this case, it is preferable to create a seal between the end faces of the transparent substrate 13 so that the material stays in a space between the end faces. For a sealing method, for example, the sealing method similar to the protective film and the sealed can of the organic EL element 14 may be adopted.

[0115] A lighting unit according to a third preferred embodiment of the present invention will now be described with reference to FIGS. 5 and 6. FIG. 5 is a schematic sectional view illustrating the lighting unit according to the third preferred embodiment of the present invention. FIG. 6 is a schematic plan view illustrating the lighting unit according to the third preferred embodiment of the present invention. It is noted that the same numeric designations are used for components in common with the lighting unit according to the first and second preferred embodiments, and a detailed explanation in common with the first and second preferred embodiments is omitted.